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The Great Lakes Region Runway Safety Newsletter

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We of the Federal Aviation Administration, Great Lakes Region, are committed to solving the runway incursion problem. The National Blueprint for Runway Safety contains the following noteworthy quote:

"Runway incursions are a high-profile problem recognized by the FAA and the aviation community as a primary threat to safety. The FAA Administrator has responded by including runway incursions in the Safer Skies initiative and creating a new organization dedicated solely to reducing incursions. The goal of the RSP is to design and execute a coherent, corporate action plan that will effectively reduce the number of incursions at our nation's airports.

Though it is incumbent upon the FAA to lead the struggle against runway incursions, no single entity 'owns' runway incursions and no single entity owns the cure. Incursions happen because a variety of people (pilots, controllers, and vehicle drivers) occasionally make mistakes. For this reason incursions are everyone's problem and everyone, at every level the problem touches, must participate in forming the solution."

"Hold Short of……"
I Never Heard a Word!

AIRLINE CAPTAIN TELLS ALL

The names have been changed to protect the airline crew and company.

This is Captain John's reply to an FAA letter advising him of an investigation into a taxi incident involving Captain John's aircraft.

Captain John states: I have been flying for 31 years; 20 years in the Air Force, and 11 years with XXX Airlines, the last 6 years as a Boeing 737 Captain. I have more than 13,000 hours. Being a pilot is the way I support my family, however I consider it much more than that: it is who I am. I have always tried to be a professional in the truest sense of the word. Consequently, safety is the most important word in my vocabulary. Never, in those 31 years, have I had anything close to an incident or accident.

The incident in question occurred, not because I was confused, careless, or forgetful, but because I simply did not hear the hold short instruction. I am not entirely certain of why I failed to hear it, but it must have been one of two things.

1. The balance of the radio vs. the intercom on our B-737-200 was such that if I turned my

master volume control loud enough to hear the ground crewman on the interphone clearly, the volume of any transmissions from ground or company on the VHF radios was loud enough to be painful. So, my technique was to monitor both comm radios at the gate, but when the ground crewman checked on the interphone, I would flip off both comm switches and turn up my master volume. After the ground crewman checked off, I would flip both comm switches back on and reduce the master volume.

On this particular pushback, when we received our taxi clearance, the comm #1 volume was still way too loud. As I listened to Ground Control tell us to taxi to RWY 19, I was adjusting my master volume downward. This volume control had a very sensitive spot where a tiny adjustment made a large difference in volume. It may have been that I inadvertently cut off the last part of the taxi clearance (the hold short part) while adjusting my volume knob.

2. I have heard of a psychological malfunction wherein one "hears what one expects to hear." The ATIS announced RWY 19 as the departure runway. An aircraft in front of us asked for RWY 28 and was denied because thunderstorms were too close off the end of that runway. So in my mind, RWY 28 was "closed," and I fully expected to hear a clearance to taxi to RWY 19. Once I heard it, I turned my attention to other things such as:

a. **Takeoff data.**
I knew from past experience that a heavy -200 on RWY 19 when it is wet, would require careful consideration on flap and bleed settings. We had already discussed the probable need for bleed-offs. Shortly after we began to taxi, the Outboard Performance Computer (OPC) jammed, requiring the First Officer to cycle the power switch and wait for it to come up again.

(continued on page 5)

"ON THE RUNWAY"
by Gail Kasson

"ON THE RUNWA

Runway crossings are a common occurrence at airports. Planes need to get from one side of the airport to the other; airport vehicles need to check runways, etc. At major Great Lakes airports, no less than 3,000 aircraft cross active runways every day as they clear the runway and taxi to the terminal. Runway incursion prevention is a top priority among controllers in the Great Lakes Region as well as across the country. Communication between controllers and pilots is the key to preventing a runway incursion and finding yourself "on the runway."

Air Traffic Controllers have responsibility for all movement areas at a towered airport. Local Control, the position in the tower who "owns" the runways, must always scan the runway for intruders. Local must give permission to another controller or aircraft to enter or cross the runway. They will send an aircraft on final around if anything enters the runway without permission. Working next to Local is Ground Control who will ask for and receive clearance to enter or cross a runway owned by Local. Ground controllers move aircraft and vehicles from non-movement to movement areas via the taxiway system. Ground will also be scanning the runway, as an extra set of eyes, but their main focus will be the taxiways and the ramp area.

When an aircraft enters a runway without a clearance by the tower, a runway incursion has taken place. This can happen when a pilot is unfamiliar with the taxi route to a runway or doesn't understand the instruction given by the controller. It can also happen because of "runway

geometry" or where two runways intersect and departure points are very close. Asking the Ground controller for progressive taxi instructions, when you are unfamiliar, will save time and keep you safe from landing and exiting aircraft along your route. If the controller is speaking too quickly, please ask them to slow down and repeat the instructions. Be aware that airport vehicles are also using the taxiways to check runways and equipment and they may not be able to see you as well as you see them. Always look for other aircraft and tell the tower when you see something that doesn't look right. Use standard phraseology and repeat all hold short instructions.

I encourage you to visit the control tower the next time you are planning a flight. Taxiways and runways look very different from several hundred feet in the air. Talk to the controllers about airport "hot spots" and runway safety. The voice at the other end of the mike is there to help you complete a safe flight. Happy flying!

Preventing Runway Incursions With A Radio

By Johnny D. Summers

Runway incursions are the main topic of discussion at any airline safety meeting. It matters to general aviation pilots as well, and the beginning of preventing runway incursions for us begins with the radio. From beginning, to end of our flight, the radio can be our extra eyes to keep us from ending our flight on a sour note.

Good preparation always begins before you get to the airplane. First, get a good headset. I have a friend who sells bikes, and when people come in looking for a helmet but are uncomfortable with the price, he tells them, "I have $10 helmets, for those with $10 heads." The same can be said for headsets. A good noise-attenuating headset optimizes radio performance and reduces background noise. Next, maintaining your aircraft radio permits optimum clarity and prevents increased radio traffic for repeat calls. All pilots should get a thorough weather briefing. That is the first step in taxiing to the correct runway. For pilots who fly different aircraft, it is important that you are familiar with the equipment in the aircraft you are flying that day. Finally, brief all your passengers on key terms to listen for; "Hold short of…," "Cross runway XX," "Cleared for take-off runway XX," etc. With these steps complete, you are ready to step to the airplane.

Once in the aircraft, and done with your normal checks, you should start your runway incursion prevention by listening to ATIS or other weather broadcasts available at your airport. This is your second step in getting to the proper runway. Then, when you call ground, tell them who, where you are, and what you want, and followed by the current ATIS information. Upon receiving clearance, you are required to read back all hold-short instructions. You should also read back the active runway to which you are cleared. When ground control clears you to the take-off runway, they are clearing you to cross all runways enroute. If there is any doubt about your clearance or taxi instructions, it is the pilot's responsibility to get clarification. Finally, monitor only the current controller frequency until clear of Class B,C, or D airspace. Additional frequencies will only distract you at a time when distraction is imprudent.

When entering controlled airspace, again ensure you are only monitoring the controlling agency's frequency. When cleared to land, read back the runway and clearance, i.e., N212BS cleared to land runway 17, or N212BS cleared for the option runway 35. After you land, clear the runway as soon as it is safe to do so, and follow tower instruction. If you are unsure of your clearance, clear the runway, stop, and ask. If you are unfamiliar with the airport, ask for progressive taxi instructions. You'll be surprised how helpful ground control can be. If you are told to contact

ground on point seven, they are expecting you to get to 121.7 (121.X is the standard ground frequency). With a little preparation, the radio can be an additional set of eyes to keep you safe and make you look good to your friends. Runway incursions happen all the time, use all the assets at your disposal to keep one from happening to you.

Bruce Kirkendoll

In the past few months, our old nemesis, the incursion, has begun to visit again. One of the nastiest situations to happen at any airport, is the incursion involving a vehicle or pedestrian!

Incursions don't just happen at air carrier airports. The general aviation airport is just as, if not more, prone to this situation. As we all know, "the best defense is a good offense;" in this case stopping the chain of events. If just one of the links in the chain of events is broken, the accident doesn't happen. Here are some ideas to help guard against incursions involving a vehicle or pedestrian at your airport:

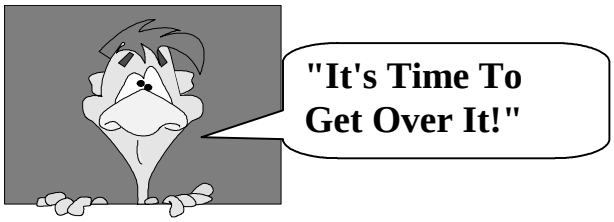
- Restrict vehicle access to runways and taxiways by keeping gates closed, and allow only those vehicles necessary for airport operations or maintenance to operate on these surfaces.

- Establish rules and procedures for vehicle and vehicle operators on the airport, and ensure that employees, tenants, and contractors are familiar with them. If we have traffic laws for operating on public streets, why not runways and taxiways?

- Establish procedures for enforcing rules and regulations, including penalties for violations through ordinances. Include provisions for compliance in leases.

- When inspecting the airport, check fencing and gates, both vehicle and pedestrian, as well as movement and non-movement area signs, markings and directions to ensure that all reasonable precautions have been taken to prevent an incursion.

Airports should regularly review their procedures and safeguards to ensure they are up to date and applicable.



Jim McElvain
Southwest Regional Safety Program Manager

The aviation community has been inundated with runway safety speeches, tapes, videos, and programs. Yet, we seem to have had a rise in runway incidents over the past year. Surely some of the rise can be attributed to increased reporting and awareness, and no doubt traffic at busy towered airports has increased. But, there has been a rise in numbers. Unfortunately, the majority of the increase is attributable to pilot deviations, especially deviations by those involved with general aviation. What the heck is going on?!

GA pilots are not a group that goes about its duties haphazardly, and none of us wants to cause an accident. So, why are we showing up so negatively in the statistics? Is it poor initial training? If so, it's time to get busy and start correcting the weaknesses. It doesn't take a lot of time to review signs and markings, and a good pilot/controller communications and phraseology session is always in order. Better pre-taxi planning, and the use of

airport diagrams, should also become a standard part of any pilot's procedures.

No matter what the level of airman expertise, there is still one area I feel all of us involved in aviation must deal with. When uncertain about what is required, or allowed, we often assume and push on. Is it ego (steely-eyed aviators cannot ask for clarification!), intimidation (ATC said it, so I've got to do it now!), or fear of violation (FAA is listening...don't appear not to know!) that keeps us from behaving rationally? If any of these factors are influencing your decision-making process when exercising your pilot skills, you are truly making poor decisions. Let's analyze some of the ramifications of yielding to these pressures.

We aviators have long exemplified the "Darned if you do, and darned if you don't" mentality. Let's look at a probable scenario at a local fixed-base operation where a strong cross wind is blowing. A pilot looks at the windsock and says, "Too much wind for me," and decides not to fly. The "lounge lizards" are bound to reply, "Going to let a little ol' breeze like that keep you from flying?" On the other hand, if our aviator decides to go and ends up with the aircraft in the bushes, the group is bound to say: "Should have known better than to go out in that kind of wind." Ego and intimidation factors are strong in aviation.

I recently reviewed the report of a runway incursion that had occurred at a large airport. A GA pilot had been cleared to a runway intersection for departure. After completing his run-up, the pilot contacted the tower and told them he was ready for takeoff. The tower replied, "1234Z, roger." After a few seconds, the pilot took the runway and departed, causing a 737 on final to go around. The GA pilot made a mistake...but why? Did he honestly think "roger" meant cleared for take off? I doubt it. I will bet that he was confused by the transmission and made no effort to clarify it. Why would he do it...ego, intimidation, fear of scrutiny or enforcement?

It's time for us to get over it. We're the captains of our ships and our destinies. We must have the maturity and self-confidence to overcome external and internal pressures that cause us to behave irrationally and make poor decisions. Besides, would you rather have your ego bruised by getting clarification or assistance, or by being interviewed about the accident that you caused by being uncertain and not following required rules and procedures?

Hold Short..... (continued from page 2)

b. **Weather.**

As we began to taxi, I adjusted the radar to get a look at the weather and formulate an escape plan.

c. **Flight Attendants.**

I needed to tell them to stay seated during the climb-out due to expected turbulence, and I needed to explain this tactfully to the passengers. Whatever the reason, I simply never recognized a word about holding short. The First Officer thought surely I had, and he concerned himself with rebooting the OPC. I may have also subconsciously put undo pressure on the First Officer to get the takeoff data computer up and running at a time when he should have been monitoring taxiing. Therefore, I take the blame for his being head down.

In spite of light rain, the visibility that evening was good. As I approached the runway 10-28, I saw another aircraft in position at far end. I assumed the aircraft was in "position and hold." To my horror, as I began to cross, the aircraft began to roll. I added power and was cleared quite quickly. I would estimate the aircraft never got closer than 9,000 feet from my aircraft. (This was supported by the XXX TRACON supervisor when I spoke to him on the phone a short time later.)

While I am not sure which of the above scenarios caused me to miss the hold short instructions, I am sure of a way to prevent it from ever occurring again. I now ask my First Officer to ensure that both of us have verbalized any hold short instructions. Our company already uses this technique to help prevent altitude deviations. I have recommended to them this technique be added to the book for taxi operations. It is in my "book," I can assure you!

This episode has been the most profoundly embarrassing and depressing incident of my 31-year career. If there is any silver lining, it might be that my First Officer and I learned an important lesson, and the safety of my passengers was not jeopardized.

Sincerely,
Captain John

Pre-Flight/Pre-Taxi

- **AIRCRAFT:** Is equipped with appropriate working radios and lights.
- **AIRPORT:** Is not congested. Avoid peak traffic hours.
- **PILOT:**
  - Is physically and mentally fit.
  - Is proficient at towered airport operations and communication.. If inexperienced or not current at towered airports, consult an instructor or experienced pilot. (Take one along!)
  - **Has appropriate equipment ready (airport diagram, knee board, pen and headset).**
  - Has current ATIS.
  - Contacts clearance delivery for IFR or VFR clearance.
  - Contacts ground control for taxi clearance. Read back all "hold short" clearances.

Taxi Procedures

- STERILE COCKPIT: **Avoid unnecessary conversation.**
- **Lights**: USE AVAILABLE EXTERNAL AIRCRAFT LIGHTING.
- **ROUTE:** Use the airport diagram, and follow the taxi clearance to the runway. ***If unsure at any time, STOP! Clarify and ask for help or progressive taxi vectors. Verify before entering or crossing ANY runway.***
- SITUATIONAL AWARENESS: **Monitor ground control to remain aware of operations that may affect your route.**

Take-Off Procedures

- SITUATIONAL AWARENESS: **Monitor ground and tower frequencies to remain aware of operations that may affect your departure.**
- CLEARANCE: **Read back your clearance for take off or position and hold.**
- VERIFICATION: **Ensure you are using the correct runway.**
- VIGILANCE: **Do not enter the runway until you have visually cleared the final approach for landing traffic.**

Approach Procedures

- STERILE COCKPIT: **Avoid unnecessary conversation until reaching the ramp.**
- ATIS: **Copy ATIS as soon as practical**
- ANTICIPATE: **Use ATIS and the airport diagram to anticipate your landing runway and taxi route to the ramp.**
- RADIO: **Have tower and ground control frequencies in standby or ready and available.**

Landing Procedures

- LIGHTS: **Use appropriate external aircraft lighting.**
- REFUSE: **DO NOT accept any landing clearance or request (Such as Land and Hold Short - LAHSO) that you cannot meet.**
- CLEARANCE: **Repeat clearance to land.**
- VERIFICATION: **Ensure that you are lined up on correct runway.**
- VACATE: **Clear the active runway, cross the hold lines, and STOP before contacting ground control.**

Taxi Procedures

- RADIO: **Contact ground control**
- CLEARANCE: **Copy your taxi clearance.**
- ROUTE: **Determine your position on the airport and use the airport diagram to taxi.** ***If unsure at any time, STOP! Clarify or ask for progressive taxi vectors. Verify before entering or crossing ANY runway.***

A FORMAL COPY OF THIS CHECKLIST, PUNCHED, AND SIZED TO FIT YOUR CHART BINDER, WILL SOON BE AVAILABLE FROM THE SAFETY PROGRAM MANAGER OF YOUR LOCAL FLIGHT STANDARDS DISTRICT OFFICE.

RUNWAY INCURSIONS

by Jory Aubrey, Air Traffic Controller

Runway incursions are certainly not a few of my favorite things, but this problem is still an issue that requires the aviation community's attention (that means you, the pilot, as well as ATC). Once again, here's the definition of a runway incursion: any occurrence at an airport involving an aircraft, vehicle, person, or object on the ground that creates a collision hazard or results in the loss of separation with an aircraft that is taking off (or intending to take off) or landing (or intending to land).

The Evidence

According to recent studies, nearly two-thirds of all runway incursions have been the result of a pilot taxiing onto a taxiway or runway without a clearance. Almost one-fourth of them have occurred because a pilot took off or landed on a runway without a clearance. Finally, about one-tenth of runway incursions have happened because a pilot landed on the wrong runway. I must tell you, it does not set well with controllers when these types of events take place. NEVER taxi or take off without a clearance!!

The Suspects

Disorientation, lack of attention to priorities, and unfamiliarity with airport layout as well as ATC phraseology were often cited as recurring deficiencies. Weather was a contributing factor, but only in one out of every nine cases. Now, don't think that these events happen solely to students or low-time pilots. A whopping 10% involved high-time pilots who should have known better --- pilots who probably thought they did know better.

The Remedies

Study the airport layouts of intended departure and arrival. Study them like your life depends on it…. because it does! Read the Aeronautical Information Manual (AIM). The AIM is a vitally useful tool, an "aviation almanac." Contrary to popular belief, it contains a wealth of instruction, not just mere guidance. For example, you can familiarize yourself with required airport signage in chapter 2 (e.g., runway holding position signs), required ATC radio communications in chapter 4, and required aircraft position/anti-collision lights (AIM, 4-3-23) --- all of which greatly reduce the number of runway incursions. Conduct complete preflight briefings, and listen to the ATIS with regard to NOTAMs, closures, special events, and obstructions. Know who you are. Sometimes, a pilot, who routinely flies more than one aircraft, misidentifies himself. Be aware of like-sounding call signs. Both pilots and controllers are responsible for using the full call sign in such situations. Ask for progressive taxi instructions from ATC, if you are unfamiliar with the airport movement areas (i.e., runways/taxiways). Remember, ATC is not responsible for ramp or parking areas. In such non-movement areas, the pilot operates at his, or her, own risk, subject to airport management. Read back all hold short/crossing/runway assignment instructions, and acknowledge all clearances for taxi/takeoff/landing. Exit the runway after landing as soon as practicable (AIM, 4-3-20), and advise ATC, if you desire to remain on a runway or taxiway for any period of time.

As I've said before, DON'T KEEP SECRETS!! Whether it is a hazard, mistake, request, or a change of intentions, pilots and controllers should keep each other informed in a timely manner so the unexpected will be kept to a minimum. I don't want to guess or assume a pilot's intentions; and, I know you, as the pilot, don't want to doubt ATC's plan of action

Ten Strategies for Runway Safety

1. **See the "Big Picture" -** Listen to the ATIS before getting into the aircraft and monitor frequencies while on the airport.
2. **Transmit Clearly** - Listen for other transmissions, prepare your own call up and execute your message using standard phraseology.
3. **Listen Carefully** - Listen to all transmissions and when it's for you, be sure you have heard all that was said.
4. **Copy Clearances -** Copy instructions. That, along with the airport plan view, will make keeping safe much more routine.
5. **Be Situationally Aware** - Listen and look for unexpected and expected movements.
6. **Admit When You are Lost** - It is much easier and safer than to explain an incursion or accident.
7. **Maintain a Sterile Cockpit** - Keep your mind clear and focused.
8. **Learn and Understand Airport Signs and Markings** - Help is available on the web, in pamphlets and color illustrations are in the Aeronautical Information Manual.
9. **Never Assume** - It is better to ask than to hope you are right.
10. **Follow Procedures** - Our system works smoothly and efficiently when we do the expected using the appropriate phraseology.

Airport Taxi Diagrams

To reduce runway incursions and improve surface navigation, the FAA Runway Safety Program Office has teamed up with the AOPA Air Safety Foundation and Jeppesen Sanderson, Inc., to provide airport taxi diagrams for more than 455 of the busiest U.S. towered airports.

The best part...it's free! Just log on to the AOPA Air Safety Foundation web site at URL**:**
www.aopa.org/asf/taxi/

Additional runway safety information may be obtained at the following web sites:
National Runway Safety Program Office: **www.faa.gov/runwaysafety**
Great Lakes Region Runway Safety Program: **www.agl.faa.gov/runwaysafety**

Great Lakes Region

Aviation Information

U.S. Department of Transportation
Federal Aviation Administration

Mike Monroney Aeronautical Center
Airman Certification Branch, AFS-760
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Oklahoma City, OK 73125

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